

Web Technology I

Course Title: Web Technology I
Course No: BIT251
Nature of the Course: Theory + Lab
Semester: IV

Full Marks: 60 + 20 + 20
Pass Marks: 24 + 8 + 8
Credit Hrs: 3

Course Description: This course covers the concepts of HTML, CSS, JavaScript and XML.

Course Objectives: The main objective of this course is to provide basic knowledge of HTML, CSS and client side scripting using JavaScript. In addition, the course covers the concepts of XML.

Course Contents:

Unit 1: Introduction (4 Hrs.)

Web Basics: Internet, Intranet, WWW, Web Page; Web Site: Static and Dynamic; Client Server Architecture: Single Tier, Two-Tier, Multi-Tier; Web Clients; Web Servers; HTTP: HTTP Request and Response; URL, Client Side Scripting, Server Side Scripting, Web 1.0, Web 2.0

Unit 2: Markup Language (11 Hrs.)

Introduction to HTML; Elements of HTML Document: HTML, Head, and Body tags; HTML Elements and HTML Attributes, Document Type Declaration; Comments in HTML; Entity and Character References; Headings, Paragraph, Division, Formatting: b, i, small, sup, sub; Spacing: Pre, Br; Formatting Text Phrases: span, strong, tt; Image element; Anchors; Lists: Ordered and Unordered and Definition; Tables; Frames; Forms: Form Elements, Meta Tag, HTML Events: Window Events, Form Element Events, Keyboard Events, Mouse Events, HTML5 Basics: Audio, Video, Canvas, Main, Section, Article, Header, Footer, Aside, Nav, Figure Tags

Unit 3: Style Sheets (10 Hrs.)

Introduction; Cascading Style Sheets (CSS); CSS Syntax; Inserting CSS: Inline, Internal, External, ID and Class Selectors; Colors; Backgrounds; Borders; Text; Font; List; Table; CSS Box Model; Normal Flow Box Layout: Basic Box Layout, Display Property, Padding, Margin; Positioning: Relative, Float, Absolute; CSS Media Queries; Basics of Responsive Web Designs, Slicing: Converting image design into HTML

Unit 4: Client Side Scripting (12 Hrs.)

Introduction to JavaScript; Basic Syntax; Structure of JavaScript Program; Variables and Data Types; Statements: Expression, Keyword, Block; Operators; Flow Controls, Looping, Functions; Popup Boxes: Alert, Confirm, Prompt; Objects and properties; Constructors; Arrays; Built-in Objects: Window, String, Number, Boolean, Date, Math, RegExp, Form, User Defined Objects; Event Handling and Form Validation, Error Handling, Handling Cookies, Basics of AJAX and jQuery

Unit 5: XML (8 Hrs.)

Introduction; XML Documents; Syntax Rules; XML Elements; XML Attributes; XML Tree; XML Namespace XML schema languages: Document Type Definition(DTD), XML Schema Definition (XSD); XSD Simple Types, XSD Attributes; XSD Complex Types; XML Style Sheets (XSLT), XQuery

Laboratory Works:

The laboratory work includes creating web pages and applications with client side scripting using HTML, CSS, JavaScript and XML technologies.

Text Books:

1. Web Technologies: A Computer Science Perspective, Jeffrey C. Jackson , *Pearson Prentice Hall*

Reference Books:

1. HTML5 and CSS3 for the Real World”, Estelle Weyl, Louis Lazaris, Alexis Goldstein, *Sitepoint*
2. Dynamic Web Programming and HTML5, Paul S. Wang, *CRC Press*
3. HTML5 Programming with JavaScript for Dummies, John Paul Mueller
4. JavaScript: The Web Technologies Series, Don Gosseli, *Course Technology Cengage Learning*
5. Web Technologies: Html, Javascript, Php, Java, Jsp, Asp.Net, Xml And Ajax, Black Book, *Dreamtech Press*
6. An Introduction to XML and Web Technologies Anders Møller and Michael I. Schwartzbach *Addison-Wesley*
7. www.w3schools.com